Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-5. Cancelled.

6. (Currently Amended) A method for creating a motion buffer to store the local properties of one or more scan-converted 3-D objects, comprising:

receiving one or more 3-D objects, wherein each 3-D object comprises one or more object primitives;

scan-converting each 3-D object's one or more object primitives into a plurality of pixel fragments corresponding to a plurality of pixels in a 2-D scene, wherein each pixel fragment is configured to store the local properties of a scan-converted object primitive including the object primitive's local color, depth, coverage, transfer mode, ~~and at least one of the object primitive's~~ rate of change of depth with time, and ~~or~~ surface geometry information[[;]] ,wherein the surface geometry information comprises spatial information about the object primitive's surface; and

inserting each of the pixel fragments into the motion buffer for subsequent composition to the 2-D scene.

7. (Original) The method of claim 6, further comprising inserting each of the pixel fragments into the motion buffer in depth sorted order.

8. (Original) The method of claim 6, further comprising storing the motion buffer as a plurality of linked lists corresponding to a plurality of pixels in the 2-D scene, wherein each link in a linked list comprises a pixel fragment having a pointer to the next pixel fragment, if any, in the linked list.

9. (Currently Amended) A method for compositing one or more scan-converted 3-D objects to a 2-D scene, comprising:

receiving a motion buffer, the motion buffer containing the rendered local properties of the one or more scan-converted 3-D objects including each scan-converted 3-D object's color, depth, coverage, transfer mode, ~~and at least one of each scan-converted 3-D object's~~ rate of change of depth with time, and ~~or~~ surface geometry information[[;]] ,wherein the surface geometry information comprises spatial information about the scan-converted object's surface; and

resolving the motion buffer by using the information stored in the motion buffer to composite the one or more scan-converted 3-D objects to the 2-D scene.

10. (Previously Presented) The method of claim 9, wherein resolving the motion buffer further comprises blending, on a per pixel basis and in depth sorted order, the color of each of the one or more 3-D objects to the color in the 2-D scene using the transfer mode of each of the one or more 3-D objects.

11. (Previously Presented) The method of claim 9, wherein the motion buffer contains surface geometry information for each of the one or more 3-D objects and resolving the motion buffer further comprises using the surface geometry information to anti-alias the one or more 3-D objects composited to the 2-D scene.

12. (Original) The method of claim 11, wherein two or more of the 3-D objects intersect over an output buffer pixel in the 2-D scene, further comprising:

determining the number of regions in the output buffer pixel in which the one or more intersecting 3-D objects are uniquely layered, and the relative coverage of each uniquely layered region;

determining a blended color for each uniquely layered region by blending in depth

sorted order the color of each of the one or more 3-D objects with the color of the output buffer pixel according to each 3-D object's transfer mode; and

painting the output buffer pixel with a weighted average of the blended colors determined for each uniquely layered region, wherein the weight assigned to the blended color of a uniquely layered region is determined by the relative coverage of that region.

13. (Previously Presented) The method of claim 9, wherein the motion buffer contains surface geometry information for the one or more 3-D objects and resolving the motion buffer further comprises using the surface geometry information to depth-of-field blur the one or more 3-D objects composited to the 2-D scene.

14. (Previously Presented) The method of claim 13, further comprising:

using the depth and surface geometry information for the one or more 3-D objects to extend, on an output buffer pixel basis, the surfaces of the one or more 3-D objects into an extended output buffer pixel;

determining whether the extended surfaces of two or more of the 3-D objects intersect over the extended output buffer pixel; and

blending the colors of the one or more 3-D objects with the color of the output buffer pixel as if two or more of the 3-D objects intersected over the output buffer pixel whenever the extended surfaces of two or more of the 3-D objects intersect over the extended output buffer pixel.

15. (Previously Presented) The method of claim 9, wherein the motion buffer contains surface geometry information for the one or more 3-D objects and resolving the motion buffer further comprises using the surface geometry information to anti-alias and depth-of-field blur the one or more 3-D objects composited to the 2-D scene.

16. (Previously Presented) The method of claim 9, wherein the motion buffer

contains the rate of change of depth for each of the one or more 3-D objects, and resolving the motion buffer further comprises using the rate of change of depth for each of the one or more 3-D objects to motion-blur the one or more 3-D objects composited to the 2-D scene.

17. (Original) The method of claim 16, wherein the surfaces of two or more of the 3-D objects pass through each other over an output buffer pixel in the 2-D scene during a shutter interval, further comprising:

determining the number of time periods during the shutter interval in which the one or more 3-D objects are uniquely layered, and the duration of each uniquely layered time period;

determining a blended color for each uniquely layered time period by blending in depth sorted order the color of each of the one or more 3-D objects with the color of the output buffer pixel according to each of the one or more 3-D objects' transfer modes; and

painting the output buffer pixel with a weighted average of the blended colors for each uniquely layered time period, wherein the weight assigned to the blended color of a uniquely layered time period is determined by the duration of that time period.

18. (Previously Presented) The method of claim 9, wherein the motion buffer contains the rate of change of depth and surface geometry information for the one or more 3-D objects, and resolving the motion buffer further comprises using the rate of change of depth and surface geometry information for the one or more 3-D objects to anti-alias and motion-blur the one or more 3-D objects composited to the 2-D scene.

19. (Original) The method of claim 18, wherein the surfaces of two or more of the 3-D objects intersect and pass through each other over an output buffer pixel in the 2-D scene during a shutter interval, further comprising:

dividing the area of the output buffer pixel and the shutter interval into a number

of uniquely layered space-time regions, wherein for each uniquely layered space-time region the surfaces of the one or more 3-D objects are uniquely layered over a portion of the output buffer pixel for a portion of the shutter interval;

determining the number and volume of each uniquely layered space-time region, wherein the volume of a uniquely layered space-time region is calculated from the portion of the output buffer pixel and the portion of the shutter interval occupied by the space-time region;

determining a blended color for each uniquely layered space-time region by blending in depth sorted order the color of each of the one or more 3-D objects stored in the motion buffer with the color of the output buffer pixel according to each object's transfer mode; and

painting the output buffer pixel with a weighted average of the blended colors for each uniquely layered space-time region, wherein the weight assigned to the blended color of a uniquely layered space-time region is determined by the volume of that uniquely layered space-time region.

20. (Previously Presented) The method of claim 9, wherein the motion buffer contains the rate of change of depth and surface geometry information for the one or more 3-D objects, and resolving the motion buffer further comprises using the rate of change of depth and surface geometry information for the one or more 3-D objects to motion-blur and depth-of-field blur the one or more 3-D objects while composited to the 2-D scene.

21. (Previously Presented) The method of claim 9, wherein the motion buffer contains the rate of change of depth and surface geometry information for the one or more 3-D objects, and resolving the motion buffer further comprises using the rate of change of depth and surface geometry information for the one or more 3-D objects to anti-alias, motion-blur and depth-of-field blur the one or more 3-D objects composited to

the 2-D scene.

22. (Previously Presented) A method for rendering a plurality of scan-converted 3-D objects to a 2-D scene, comprising:

splitting the plurality of scan-converted 3-D objects into one or more non-interacting object clusters;

rendering all non-simple and non-interacting object clusters to a motion buffer, the motion buffer containing the rendered local properties of the one or more scan-converted 3-D objects including each scan-converted 3-D object's color, depth, coverage, transfer mode, and at least one of each scan-converted 3-D object's rate of change of depth or surface geometry information; and

resolving the motion buffer to composite the non-simple and non-interacting object clusters to the 2-D scene.

23. (Original) The method of claim 22, further comprising rendering all simple and non-interacting object clusters directly to the 2-D scene.

24. (Original) The method of claim 22, further comprising rendering all simple and non-interacting object clusters to the motion buffer; and resolving the motion buffer to composite both the simple and non-interacting object clusters and the non-simple and non-interacting object clusters to the 2-D scene.

25. (Original) The method of claim 22, further comprising creating a merged motion buffer by adding to the contents of the motion buffer the contents of a second motion buffer containing one or more separately rendered 3-D objects; and compositing the contents of the merged motion buffer to the 2-D scene.

26. (Currently Amended) A computer program product, implemented on a machine

readable medium, for creating a motion buffer to store the local properties of one or more 3-D objects, the computer program product comprising instructions operable to cause a programmable processor to:

receive one or more 3-D objects, wherein each 3-D object comprises one or more object primitives;

scan-convert each 3-D object's one or more object primitives into a plurality of pixel fragments corresponding to a plurality of pixels in a 2-D scene, wherein each pixel fragment is configured to store the local properties of a scan-converted object primitive including the object primitive's local color, depth, coverage, transfer mode, and at least one of the object primitive's rate of change of depth with time, and ~~or~~ surface geometry information[[;]] ,wherein the surface geometry information comprises spatial information about the object primitive's surface; and

insert each of the pixel fragments into the motion buffer for subsequent composition to the 2-D scene.

27. (Original) The computer program product of claim 26, further comprising instructions operable to cause a programmable processor to insert each of the pixel fragments into the motion buffer in depth sorted order.

28. (Original) The computer program product of claim 26, further comprising instructions operable to cause a programmable processor to store the motion buffer as a plurality of linked lists corresponding to a plurality of pixels in the 2-D scene, wherein each link in a linked list comprises a pixel fragment having a pointer to the next pixel fragment, if any, in the linked list.

29. (Currently Amended) A computer program product, implemented on a machine readable medium, for compositing one or more scan-converted 3-D objects to a 2-D scene, the computer program product comprising instructions operable to cause a

programmable processor to:

receive a motion buffer, the motion buffer containing the rendered local properties of the one or more scan-converted 3-D objects including each scan-converted 3-D object's color, depth, coverage, transfer mode, and at least one of each scan-converted 3-D object's rate of change of depth with time, and ~~or~~ surface geometry information[[;]] ,wherein the surface geometry information comprises spatial information about the scan-converted 3-D object's surface; and

resolve the motion buffer by using the information stored in the motion buffer to composite the one or more scan-converted 3-D objects to the 2-D scene.

30. (Previously Presented) The computer program product of claim 29, wherein the instructions to resolve the motion buffer further comprises instructions to blend, on a per pixel basis and in depth sorted order, the color of each of the one or more 3-D objects to the color in the 2-D scene using the transfer mode of each of the one or more 3-D objects.

31. (Previously Presented) The computer program product of claim 29, wherein the motion buffer contains surface geometry information for each of the one or more 3-D objects and the instructions to resolve the motion buffer further comprises instructions to use the surface geometry information to anti-alias the one or more 3-D objects composited to the 2-D scene.

32. (Original) The computer program product of claim 31, wherein two or more of the 3-D objects intersect over an output buffer pixel in the 2-D scene, further comprising instructions operable to cause a programmable processor to:

determine the number of regions in the output buffer pixel in which the one or more intersecting 3-D objects are uniquely layered, and the relative coverage of each uniquely layered region;

determine a blended color for each uniquely layered region by blending in depth

sorted order the color of each of the one or more 3-D objects with the color of the output buffer pixel according to each 3-D object's transfer mode; and

paint the output buffer pixel with a weighted average of the blended colors determined for each uniquely layered region, wherein the weight assigned to the blended color of a uniquely layered region is determined by the relative coverage of that region.

33. (Previously Presented) The computer program product of claim 29, wherein the motion buffer contains surface geometry information for the one or more 3-D objects and the instructions to resolve the motion buffer further comprises instructions to depth-of-field blur the one or more 3-D objects composited to the 2-D scene.

34. (Currently Amended) ~~The~~ A computer program product ~~of claim 33~~, implemented on a machine readable medium, for compositing one or more scan-converted 3-D objects to a 2-D scene, the computer program product ~~further~~ comprising instructions operable to cause a programmable processor to:

receive a motion buffer, the motion buffer containing the rendered local properties of the one or more scan-converted 3-D objects including each scan-converted 3-D object's color, depth, coverage, transfer mode and surface geometry information; and to

resolve the motion buffer by using the information stored in the motion buffer to composite and depth-of-field blur the one or more scan-converted 3-D objects to the 2-D scene; wherein the instructions to depth-of-field blur the one or more scan-converted 3-D objects further comprises instructions to:

use the depth and surface geometry information for the one or more 3-D objects to extend, on an output buffer pixel basis, the surfaces of the one or more 3-D objects into an extended output buffer pixel;

determine whether the extended surfaces of two or more of the 3-D objects intersect over the extended output buffer pixel; and

blend the colors of the one or more 3-D objects with the color of the output buffer

pixel as if two or more of the 3-D objects intersected over the output buffer pixel whenever the extended surfaces of two or more of the 3-D objects intersect over the extended output buffer pixel.

35. (Previously Presented) The computer program product of claim 29, wherein the motion buffer contains the surface geometry information for the one or more 3-D objects and the instructions to resolve the motion buffer further comprises instructions to use the surface geometry information to anti-alias and depth-of-field blur the one or more 3-D objects composited to the 2-D scene.

36. (Previously Presented) The computer program product of claim 29, wherein the motion buffer contains the rate of change of depth for each of the one or more 3-D objects, and the instructions to resolve the motion buffer further comprises instructions to use the rate of change of depth for each of the one or more 3-D objects to motion-blur the one or more 3-D objects composited to the 2-D scene.

37. (Currently Amended) ~~The~~ A computer program product ~~of claim 36~~, implemented on a machine readable medium, for compositing one or more scan-converted 3-D objects to a 2-D scene, wherein the surfaces of two or more of the 3-D objects pass through each other over an output buffer pixel in the 2-D scene during a shutter interval, ~~further~~ the computer program product comprising instructions operable to cause ~~the~~ a programmable processor to:

receive a motion buffer, the motion buffer containing the rendered local properties of the one or more scan-converted 3-D objects including each scan-converted 3-D object's color, depth, coverage, transfer mode and rate of change of depth; and to

resolve the motion buffer by using the information stored in the motion buffer to composite and motion-blur the one or more scan-converted 3-D objects to the 2-D scene; wherein the instructions to motion-blur the one or more scan-converted 3-D objects

further comprises instructions to:

determine the number of time periods during the shutter interval in which the one or more 3-D objects are uniquely layered, and the duration of each uniquely layered time period;

determine a blended color for each uniquely layered time period by blending in depth sorted order the color of each of the one or more 3-D objects with the color of the output buffer pixel according to each of the one or more 3-D objects' transfer modes; and

paint the output buffer pixel with a weighted average of the blended colors for each uniquely layered time period, wherein the weight assigned to the blended color of a uniquely layered time period is determined by the duration of that time period.

38. (Previously Presented) The computer program product of claim 29, wherein the motion buffer contains the rate of change of depth and surface geometry information for the one or more 3-D objects, and the instructions to resolve the motion buffer further comprises instructions to use the rate of change of depth and surface geometry information for the one or more 3-D objects to anti-alias and motion-blur the one or more 3-D objects composited to the 2-D scene.

39. (Currently Amended) ~~The~~ A computer program product ~~of claim 38~~, implemented on a machine readable medium, for compositing one or more scan-converted 3-D objects to a 2-D scene, wherein the surfaces of two or more of the 3-D objects intersect and pass through each other over an output buffer pixel in the 2-D scene during a shutter interval, ~~further~~ the computer program product comprising instructions operable to cause ~~the~~ a programmable processor to:

receive a motion buffer, the motion buffer containing the rendered local properties of the one or more scan-converted 3-D objects including each scan-converted 3-D object's color, depth, coverage, transfer mode, rate of change of depth and surface geometry information; and to

resolve the motion buffer by using the information stored in the motion buffer to composite, anti-alias and motion-blur the one or more scan-converted 3-D objects to the 2-D scene: wherein the instruction to anti-alias and motion-blur the one or more scan-converted 3-D objects further comprises instructions to:

divide the area of the output buffer pixel and the shutter interval into a number of uniquely layered space-time regions, wherein for each uniquely layered space-time region the surfaces of the one or more 3-D objects are uniquely layered over a portion of the output buffer pixel for a portion of the shutter interval;

determine the number and volume of each uniquely layered space-time region, wherein the volume of a uniquely layered space-time region is calculated from the portion of the output buffer pixel and the portion of the shutter interval occupied by the space-time region;

determine a blended color for each uniquely layered space-time region by blending in depth sorted order the color of each of the one or more 3-D objects stored in the motion buffer with the color of the output buffer pixel according to each object's transfer mode; and

paint the output buffer pixel with a weighted average of the blended colors for each uniquely layered space-time region, wherein the weight assigned to the blended color of a uniquely layered space-time region is determined by the volume of that uniquely layered space-time region.

40. (Previously Presented) The computer program product of claim 29, wherein the motion buffer contains the rate of change of depth and surface geometry information for the one or more 3-D objects, and the instructions to resolve the motion buffer further comprises instructions to use the rate of change of depth and surface geometry information for the one or more 3-D objects to motion-blur and depth-of-field blur the one or more 3-D objects composited to the 2-D scene.

41. (Previously Presented) The computer program product of claim 29, wherein the motion buffer contains the rate of change of depth and surface geometry information for the one or more 3-D objects, and the instructions to resolve the motion buffer further comprises instructions to use the rate of change of depth and surface geometry information for the one or more 3-D objects to anti-alias, motion-blur and depth-of-field blur the one or more 3-D objects composited to the 2-D scene.

42. (Previously Presented) A computer program product, implemented on a machine readable medium, for rendering a plurality of scan-converted 3-D objects to a 2-D scene, the computer program product comprising instructions operable to cause a programmable processor to:

split the plurality of scan-converted 3-D objects into one or more non-interacting object clusters;

render all non-simple and non-interacting object clusters to a motion buffer, the motion buffer containing the rendered local properties of the one or more scan-converted 3-D objects including each scan-converted 3-D object's color, depth, coverage, transfer mode, and at least one of each scan-converted 3-D object's rate of change of depth or surface geometry information; and

resolve the motion buffer to composite the non-simple and non-interacting object clusters to the 2-D scene.

43. (Original) The computer program product of claim 42, further comprising instructions operable to cause the programmable processor to render all simple and non-interacting object clusters directly to the 2-D scene.

44. (Original) The computer program product of claim 42, further comprising instructions operable to cause the programmable processor to render all simple and non-interacting object clusters to the motion buffer; and to resolve the motion buffer to

composite both the simple and non-interacting object clusters and the non-simple and non-interacting object clusters to the 2-D scene.

45. (Original) The computer program product of claim 42, further comprising instructions operable to cause the programmable processor to create a merged motion buffer by adding to the contents of the motion buffer the contents of a second motion buffer containing one or more separately rendered 3-D objects; and compositing the contents of the merged motion buffer to the 2-D scene.